

## **EPA Comments on FDEP's Triennial Review**

### Analysis of Florida's Toxics Revisions Based on Commercial Landings Information

EPA has concluded that the use of the commercial landings approach results in human health criteria that are inconsistent with the goal of the designated uses for drinking water and fish consumption in the State. The proposed revision would lessen the level of protection currently applicable to the State, specifically as it relates to the level of exposure for a Floridian through these designated uses. EPA's current national criteria recommendations are based on total estuarine and freshwater fish and water consumption. The State's proposed approach, which utilizes a commercial landings distribution, focuses on an extremely limited subset of this exposure consideration. The State should instead focus on an alternative fish consumption distribution that more accurately represents the total level of exposure to Floridians from fresh, estuarine, and near coastal fish caught both within and outside of State borders.

Clean Water Act (CWA) section 303(c)(2)(A) requires that water quality standards (WQS) protect public health and CWA section 101(a)(2) establishes the broad goal of "...protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water..." Given the breadth of this goal, EPA has interpreted section 101(a)(2) to refer not only to protecting water quality so the fish and shellfish thrive, but also to protect them as a food source. Thus, to be consistent with section 101(a)(2), the applicable designated uses must not only protect the aquatic organisms themselves, but also protect human health through consumption of fish and shellfish. EPA's recommended water quality criteria to protect these "fishable" designated uses, and accompanying risk assessment methodologies, reflect the longstanding interpretation that a designated use consistent with the goals of the Act means that State and Tribal waters should support safe consumption of fish and shellfish at the total rate of consumption of fresh, estuarine, and near coastal fish and shellfish demonstrated by their population. In other words, the standards should be set to enable residents to safely consume from local waters the amount of fish they would normally consume from all fresh, estuarine, and near coastal waters.<sup>1</sup> This approach is consistent with a principle that every State does its share to protect people who consume fish and shellfish that originate from multiple jurisdictions.<sup>2</sup> The goal of water quality criteria for human health is to protect people from exposure to pollutants through fish and water over a lifetime<sup>3</sup>, and the goal of a State's designated use should be that the waters are safe to fish in the context of the total consumption pattern of its residents.

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<sup>1</sup> It is also important to avoid any suppression effect that may occur when a fish consumption rate for a given subpopulation reflects an artificially diminished level of consumption from an appropriate baseline level of consumption for that subpopulation because of a perception that fish are contaminated with pollutants.

<sup>2</sup> For example, if a State were to conclude that 5 percent of its residents fish consumption come from State waters, and apply a corresponding 5 percent of the safe dose from fish for a particular pollutant to that exposure, it would mathematically produce the same result for criteria derivation as assuming 100 percent of the consumption is from State waters and applying a corresponding 100 percent of the safe dose from fish.

<sup>3</sup> Likewise, because people are expected to continue consuming fish and shellfish throughout their lifetime regardless of where they live, and this consumption leads to similar exposure to pollutants, it is appropriate to derive protective human health criteria in State and Tribal water quality standards assuming a lifetime of exposure.

## Comments on Proposed Revisions Based on Commercial Landings Information

EPA has prepared the following comments and technical recommendations for use by the State in its preparation of a final proposal.

1. Given the above concerns related to the commercial landings approach and the stated goals of the human health ambient water quality criteria, an alternative approach should use a more inclusive fish consumption rate in the population exposure distribution. Because the goal of the criteria is to allow people to be able to obtain all fresh, estuarine, and near coastal fish from waters of the state, should they so choose, Florida should use a fish consumption distribution that includes all fresh, estuarine, and near coastal fish consumed by Florida residents. The fish consumption analysis should consider both the general population and the consumer only populations.
2. The level of protection for the criteria may vary, depending on the population considered, but an analysis of protectiveness of the criteria for the general population, recreational fishers and subsistence fishers should be included in the criteria documentation. For example, EPA considers protection of the general population to be represented by the 90<sup>th</sup> percentile of a total exposure distribution utilizing a per capita fish consumption distribution and the 50<sup>th</sup> percentile of a total exposure distribution utilizing a consumers only fish consumption distribution. If present in the state, subsistence fishers should be considered on a site specific basis. EPA's 2000 Human Health Methodology recommends values for fish consumption rates for recreational and subsistence fishers and these rates may be considered by Florida.
3. For all non-carcinogens without an existing RSC already reflected in Florida's proposed methodology, EPA recommends that a default of 20% be used. Relative source contribution is used to account for other sources of the pollutant in the environment such as ingestion from food other than fish, fish not reflected in the fish consumption rate (including farmed fish and deep water marine fish), inhalation and dermal exposures. The 20% value is a default recommended by EPA for use in the absence of detailed data on exposure to a particular pollutant. Its use is intended to ensure that the total exposure to a particular pollutant does not exceed the reference dose for that pollutant. EPA feels that in the absence of data, a 20% RSC value is a reasonable assumption. Assessments should reflect exposure to contaminants over the lifetime of the individual and consider exposure to all sources through RSC or direct calculation.
4. EPA notes that the drinking water consumption recommended in Florida's criteria calculation is a rate for tap water ingestion. For the drinking water consumption component of the criteria, EPA recommends that the State use the 2011 Exposure Factors Handbook Table 3-36 for consumer-only estimates of combined direct and indirect water ingestion based on NHANES 2003-2006: all sources (mL/day) for adults 21 years old or older.
5. The following links provide updates for three of the parameter specific toxicity values in Table 2-11 for outdated IRIS values: Dichlorobromomethane

([http://water.epa.gov/action/advisories/drinking/upload/2006\\_05\\_04\\_criteria\\_drinking\\_br thm-200605-508.pdf](http://water.epa.gov/action/advisories/drinking/upload/2006_05_04_criteria_drinking_br thm-200605-508.pdf)), Lindane (gamma-BHC) (<http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPP-2002-0202-0002>), and Methyl bromide ([http://www.epa.gov/pesticides/chem\\_search/hhbp/D304623.pdf](http://www.epa.gov/pesticides/chem_search/hhbp/D304623.pdf)).

### Comments on Proposed Revisions to 62-302.530 (Criteria Table)

EPA also offers the following specific suggestions related to recommended revisions to the revised aquatic life-based criteria and other general comments.

1. If the cadmium criterion is intended to be expressed in terms of the dissolved metal, the cadmium equation appears to be missing the CCC conversion factor. The CCC conversion factor for cadmium is  $1.101672 - [(\ln H)(0.041838)]$ . The same comment applies to chromium(III), copper, lead, nickel, and zinc. The CCC conversion factors for chromium(III), copper, lead, nickel, and zinc are 0.860, 0.960,  $1.46203 - [(\ln H)(0.145712)]$ , 0.997, and 0.986, respectively.
2. After reviewing the State's criteria table against EPA's current criteria recommendations at the website <http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm> it appears that there are some differences. If EPA's recommendations are different from how the criteria were derived by the State it would be useful to clarify the origin of the alternate criteria values. The following differences are as follows:

<b>Parameter (fresh or marine)</b>	<b>FDEP Criterion</b>	<b>EPA Criterion</b>
Copper (marine)	3.7 µg/L	3.1 µg/L
Lead (marine)	8.5 µg/L	8.1 µg/L
Nickel (marine)	8.3 µg/L	8.2 µg/L
Endrin (fresh)	0.0023 µg/L	0.036 µg/L
Pentachlorophenol (fresh)	$e^{1.005(\text{pH}) - 5.29}$	CMC = $e^{1.005(\text{pH}) - 4.869}$ CCC = $e^{1.005(\text{pH}) - 5.134}$
Silver (marine)	2.3 µg/L	1.9 µg/L
Silver (fresh)	0.07 µg/L	3.2 µg/L
Thallium (Class I)	1.7 µg/L	0.24 µg/L
Thallium (Class II and III)	6.3 µg/L	0.47 µg/L

3. Numbers and letters should be corrected within the table. For example, within the table the nutrient criteria narrative is now cited as 67(a) and 68(b) and oils and greases are now cited as 70(a) and 71(b). Also, where table citations are referenced elsewhere in the State's regulations, it is recommended that the citations be updated accordingly, such as would be the case for the nutrient criteria narrative provisions.